PCT/DE2003/002011

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P802907/WO/1	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/DE2003/002011	International filing date (*day/month/year*) 16 June 2003 (16.06.2003)	Priority date (*day/month/year*) 18 June 2002 (18.06.2002)
International Patent Classification (IPC) or national classification and IPC B29C 67/00		
Applicant DAIMLERCHRYSLER AG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
16 December 2003 (16.12.2003)	03 June 2004 (03.06.2004)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/DE2003/002011

I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed

☒ the description:

pages 1-11, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☒ the claims:

pages 2-10, as originally filed

pages _____, as amended (together with any statement under Article 19

pages _____, filed with the demand

pages 1, filed with the letter of 23 April 2004 (23.04.2004)

☐ the drawings:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims	1-10	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

2. Citations and explanations

1. This report makes reference to the following document:
D1: US-A-4 944 817 (BARLOW JOEL W ET AL) 31 July 1990 (1990-07-31).

2.1 D1 discloses a particle for use in selective laser sintering containing:
- a core made of at least one first material
- an at least partial coating of the core with a second material, the second material having a lower softening temperature than the first material (see column 6, line 14 to column 7, line 57 and figure 10), from which the subject matter of claim 1 differs in that the softening temperature of the second material is less than approximately 70°C.

Therefore, the subject matter of claim 1 is novel (PCT Article 33(2)).

2.2 Therefore, the problem to be solved by the present invention can be regarded as that of minimizing the temperature difference between irradiated and non-irradiated particles.

2.3 The problem is solved by using particles having a

coating with a softening temperature of less than approximately 70°C. This requires less energy to be supplied during laser sintering, thereby minimizing the temperature difference between irradiated and non-irradiated particles. None of the cited documents shows or renders obvious the above-mentioned solution. Therefore, the subject matter of claim 1 is regarded as inventive (PCT Article 33(3)).

2.4 Claims 2-6 are dependent on claim 1 and therefore likewise meet the PCT requirements for novelty and inventive step.

3.1 D1 discloses a method for producing a three-dimensional object by means of SLS involving the following steps:

- applying a coating of particles to a target surface
- irradiating a selected portion of the layer corresponding to a cross-section of the object by means of an energy beam such that the particles in the selected portion are bonded,
- repeating the steps of coating and irradiating for a plurality of layers such that the bonded portions of adjoining layers are bonded in order to form the object (see column 2, lines 34-46),

from which the subject matter of claim 1 differs in that particles are used that contain at least one material, the softening temperature of which is less than approximately 70°C.

Therefore, the subject matter of claim 7 is novel (PCT Article 33(2)).

3.2 The problem to be solved by the present invention can therefore be regarded as that of minimizing the temperature difference between irradiated and non-irradiated particles.

3.3 **The subject matter of claim 7 is regarded as inventive (PCT Article 33(3))** for the same reason as that indicated in point 2.3.

3.4 Claims 8 and 9 are dependent on claim 7 and therefore likewise meet the PCT requirements for novelty and inventive step.

4. D1 discloses an object comprised of particles bonded together (see figure 4), from which the subject matter of claim 1 differs in that it was made from particles according to claim 1. **Therefore, the subject matter of claim 10 is novel (PCT Article 33(2)). The subject matter of claim 10 is regarded as inventive (PCT Article 33(3))** for the same reason as that indicated in point 2.3.

5. **Claims 1-10 are industrially applicable (PCT Article 33(4)).**